



RESEARCH LABORATORIES, INC.

A SUBSIDIARY OF THE LUFKIN RULE COMPANY

210 WEST 131ST STREET | LOS ANGELES, CALIFORNIA 90061 | AREA CODE 213 • 321-6283

Dear Sir:

Thank you for your inquiry. Enclosed is the information you requested on the Lufkin Magnetic Tape Recorders.

Here are just a few of the unique features of the Lufkin recorder:

- exceptional portability
- quick access (non-threading) tape cartridge
- rugged weatherproof construction
- two modes of data introduction, manual and/or automatic
- self-contained rechargeable power supply
- solid state modularized electronics

In addition to the standard models described by the data sheet, special configurations for specific applications are also available. Furnish us with a brief outline of your particular application and we will provide recommended approaches for your consideration.

Again ... thank you for the inquiry.

Very truly yours,

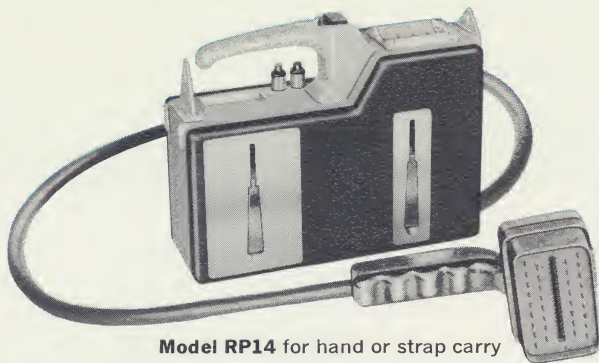
LUFKIN RESEARCH LABORATORIES, INC.

A handwritten signature in blue ink, appearing to read "C. Muhle".

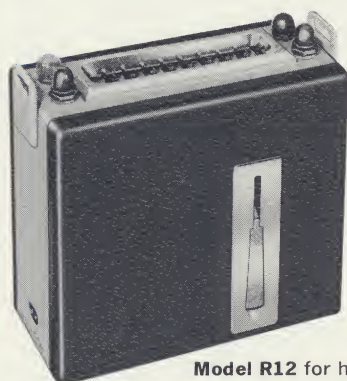
Charles G. Muhle
Senior Applications Engineer

CGM:rb
Enclosures

DIGITAL TAPE RECORDERS alternate configurations



Model RP14 for hand or strap carry



Model R18
for desk or
hand carry

Model R12 for hand or strap carry

The LUFKIN MODELS R12 and R18 tape recorders are designed for either field or semi-fixed use. The R18 has a convenient carrying handle which folds down to form a desk stand. Both configurations provide for manual data input through self-contained digital switches, with visual readout of switch positions (see illustrations). Since both units employ the same tape cartridge as Models R13 and

LUFKIN MODEL RP14 recorder has all of the preceding technical features **plus** externally controlled selection of input source (integral switches or external source), **plus** a cartridge-loaded paper tape which displays information synchronized with the magnetic tape. Up to three lines of printed data are visible through a window in the top panel, and this data advances one frame after each magnetically recorded digital word. This visual display may be used to provide routing information to operator acquiring field data. Total weight of the unit is approximately 7 pounds, including input cable and shoulder strap.

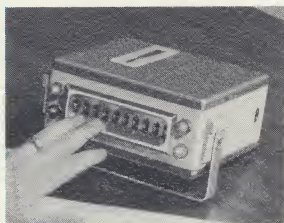


RP14, it is possible to use any combination of LUFKIN recorders to feed data to the same data accumulation and data processing equipment. Where units will be used in semi-fixed applications, connection to a small external battery charger permits simultaneous charging of the internal battery while recording on AC power. In portable use, the battery provides one week's operation.



INPUT OPTIONS:

Data Coupling Plug, Model P19: Remote control of the recorder as well as electrical access to data sources may be obtained via a hand-held plug, which will also identify the data source and provide connection validity checks. Source identification alone may be provided, or a combination of identification plus electrical connection to digital transducers. Source identification is made by insertion into a mating LUFKIN receptacle having a digitally significant mosaic of recesses; these, in turn, are sensed by magnetic reed switches actuated by plungers in the plug. Remote transducer extensions may be read and identified by the Data Coupling Plug. **Source Identification and Coding**—Up to 34 binary bits (specify); reed switch matrix. **Recorder Start Switch**—Weatherproof. **Lamp** "In Operation" indicator. **Mates with** LUFKIN receptacles having up to 40 electrical contacts (or 20 bifurcated contacts), gold plated and rated for over 100,000 insertions.



Self-Contained Digital Switches: Data may be entered manually into switches located on the top panel of all recorders. Up to 10 decimal decades are available on Models R12, R13 and R18, and up to 6 decades are available on the Model RP14.

Special Input Devices: Specialized electrical connectors and other digital input devices can be supplied on special order to adapt LUFKIN recorders to virtually any digital logging task.

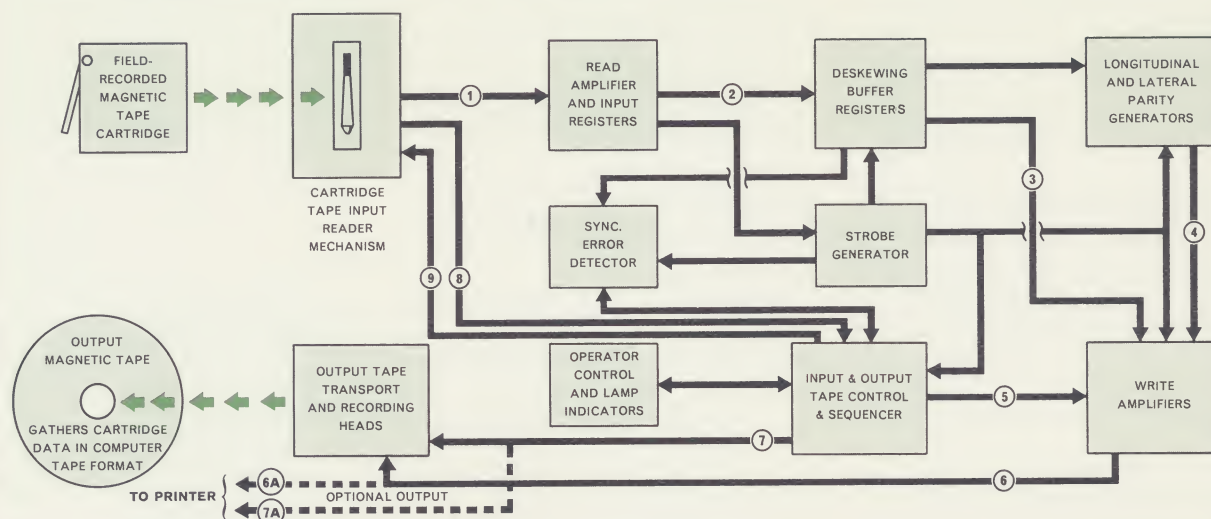
(Design configuration subject to change)

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CARTRIDGE-TO-COMPUTER TAPE CONVERTER

BASIC ELECTRONIC SUBSYSTEM BLOCK DIAGRAM



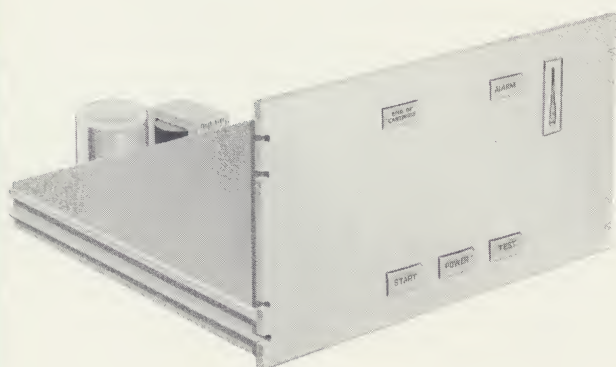
CONTROLS:

Automatic—Local, End of Tape, and Load Point

Rewind—Write Enabled and Power Switches

MAJOR FUNCTIONS AND STATES:

- | | |
|------------------------------------|-----------------------------------|
| 1. Read head signals | 5. Synchronized gate to amplifier |
| 2. Amplified signals | 6. Synchronized "Record" pulses |
| 3. De-skewed data | 7. Output tape command pulses |
| 4. Parity-check pulse to amplifier | 8. "End-of-Tape" signal |
| | 9. "Off" pulse |



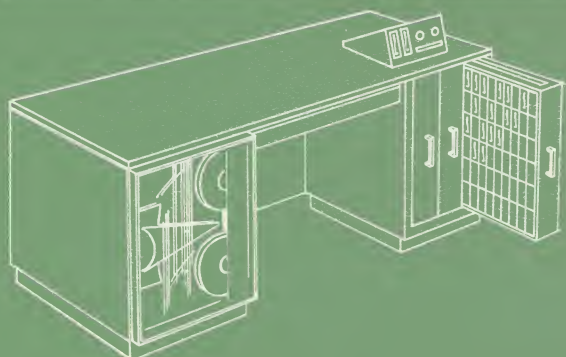
MODEL TR95 INPUT UNIT

Input magnetic tape read-write unit available separately with custom control and recording electronics for your data transmission, program control, or special recording application. LUFKIN RESEARCH LABORATORIES will give the prompt attention of an experienced engineering staff to quotation on special magnetic recording equipment.

CONSOLE OPTIONS

Attractive control console versions of the TC 95 are available on special order to your specifications. Your requirements for efficient cartridge handling will be interpreted by LUFKIN engineers quickly and economically.

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NEW COMPACT DIGITAL MAGNETIC TAPE RECORDING EQUIPMENT FROM

LUFKIN RESEARCH
LABORATORIES

*portable, lightweight,
cartridge-loaded*

DIGITAL TAPE RECORDERS

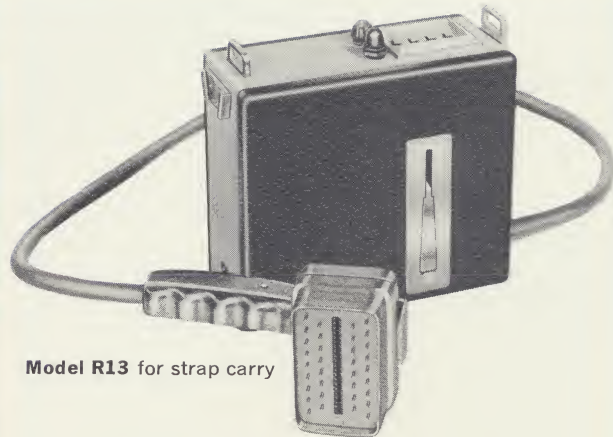
for rugged field applications

- Input From External Parallel Digital Sources Or From Self-Contained Manual Switches
- Automatic Digital Word Formation, Scanning, and Input Selection
- Usable With A Wide Selection Of Input Devices, To Your Requirement
- Solid State Welded-Module Plug-In Circuitry
- Powered By Self-Contained Rechargeable Battery Pack
- Weight 5 to 7 Lbs.

LUFKIN portable digital tape recorders are for field or semi-fixed applications, where data is entered from digital transducers, manually, or from both sources simultaneously. Durable non-threading magnetic tape cartridges load in seconds and they provide complete protection for data enroute to central data processing points. Each cartridge contains enough 1/2-inch tape for a full day's manual recording of 7-channel data, without gaps, which can be read into printers or off-line recorders by high speed LUFKIN tape reading equipment.

APPLICATIONS:

LUFKIN portable digital recorders simplify error-free data acquisition and retention in virtually all cases where facts can be put into digital form. Typical applications are: Utility service meter reading • Process variable remote reading • Production control • Inventory control • Energy distribution supervisory control • Research data logging • Vehicular movement accounting • Census and poll taking • Oil field data accumulation • Machine tool numerical control • Vending and fare cash flow accounting.



Model R13 for strap carry

TECHNICAL FEATURES—All Models

Tape— 1/2 inch, 7 tracks with EDP-compatible lateral spacing

Speed— Records at 1/4 ips; cartridge will read at up to 15 ips

Framing— Sync. with drive for uniform density;
sync. pulses recorded

Input— Serial, serial-parallel or parallel BCD,
binary, or any digital code

Format Conversion— Automatic built-in solid state
scanning matrix, and framing generator

Input Level— -6 V = logical "1" and 0 V = logical "0";
or switch closure to common = logical "1" (0-100 ohms),
and open circuit = logical "0" (> 100K ohms)

Max. Parallel Input Bits/Recorded Word— 60

Word Length— 12 Frames or less, redundant recording of
words, or up to 24 frames/word available

Drive Motor Control— Electronic braking at word end
(no density variation between words,
no gap); external start control

Word Identification— Sync. pulse gap (one channel only)

Cartridge Information Capacity— 100,000 Binary bits,
plus synchronization; higher capacity available

Tape Tension Control— Mechanical servo

Tape Drive Method— Capstan

Tape Longit. Information Density— 50 CPI \pm 10%;
higher available

Batteries— Self-contained NiCd pack, recharge
via access cable overnight after
recording 5 full cartridges

End-of-Tape Sensing— Conductive; indicator on panel

Interlocks— Special inputs available to control or
interlock drive motor from external sources

Controls— Error switch (previous word correction);
start button; power on-off; input switches (optional)

Indicators— Framing (pulses while recording);
mode or data source; end-of-tape

Construction— Solid state, modularized welded circuits

Environment— -40°F to +130°F; corrosion and
water resistant; withstands daily rough handling
in field conditions

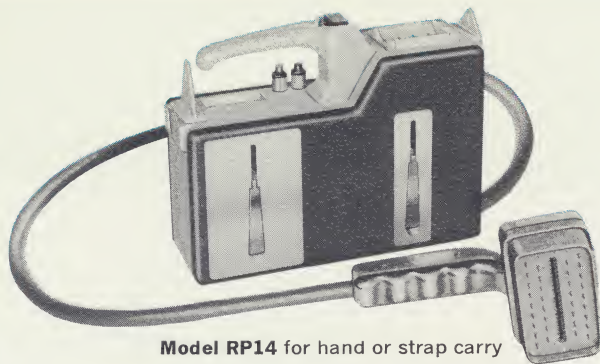
Recording Mode— RTB

PATENTS PENDING

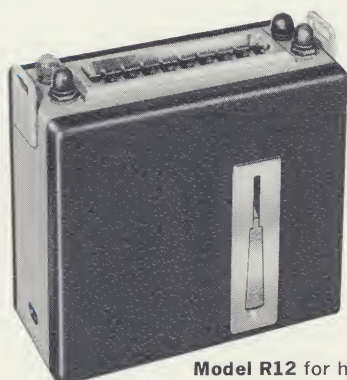
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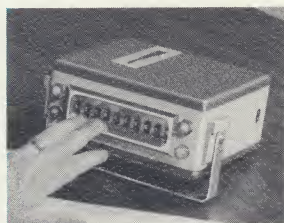
Model R18
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